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Background Guide

Commission on the Status of Women



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Women in STEM - Gender Equality and the Empowerment of Women in the Era of Climate Change

Introduction

The topic in the Commission on the Status of Women this year is a pressing issue that is more applicable to women across the world, getting more women into STEM. This seeks to address the problem of gender inequality (Goal 5 of the Sustainable Development Goals) by uplifting women, in a positive-action driven manner. The inclusion of this issue in the Sustainable Development Goals has given new momentum to the work done by the Commission on the Status of Women: an organisation which has been in action almost as long as the United Nations itself.

This topic enables delegates to research the current actions of feminists around the world but also gives them the space to be creative and think about new and innovative solutions to problems which already have a vast amount of literature. As we come to reassess our attitude to these issues, as the importance of scientific progress can no longer be ignored and long-term solutions need to be found, the relevance of the topic is undisputed. This committee will therefore definitely be one of the most exciting and engaging at the conference!

History of the Committee

The Commission on the Status of Women is a sub-commission of the United Nations Economic and Social Council (ECOSOC), which, along with the General Assembly and Security Council, is one of the main bodies of the UN. The CSW was established in 1946 as a mechanism to promote, report on and monitor issues relating to the political, economic, civil,

social and educational rights of women.¹ It was first responsible for contributing to the draft of the Universal Declaration of Human Rights and inserting gender-sensitive language into this pioneering document.

It continued, throughout the 20th century, to work with the emerging feminist movement, fighting in particular for reproductive rights to be recognised in the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW), which famously the United States has failed to ratify.² The Beijing Declaration and Platform for Action in 1995, on the other hand, has been hailed as “the most comprehensive articulation of international commitments related to women’s human rights”.³ Member States agree on further actions to accelerate progress and promote women’s enjoyment of their rights in political, economic, and social fields. The outcomes and recommendations of each session are forwarded to ECOSOC for follow-up.

Statement of the Problem

Women are still underrepresented in the so-called “hard” science fields, technology, engineering, and mathematics (STEM). One fact observed is that they step out of the field of study after university while men are more likely to stay in STEM. As a consequence, women are also underrepresented in STEM-related industrial or academic leading positions and boards. In addition to the tendency to leave research earlier than similarly qualified men,

¹ Alston, Phillip. *The United Nations and human rights: a critical appraisal*. New York: Oxford University Press, 1992.

² "Short History of the Commission on the Status of Women" (PDF). United Nations. Retrieved February 21,2017.

³ "BEIJING + 15 No Equality Without Full Enjoyment of Women's Sexual and Reproductive Rights" (PDF). Center for Reproductive Rights. Retrieved February 21,2017.

women in science are still paid less, promoted less, and win fewer grants. This not only contributes to the gender pay gap directly, as many jobs in STEM are highly paid, but also creates a culture where women feel as though jobs in the industry are closed off and girls are discouraged from taking STEM subjects as they are told to be 'naturally' worse than their male counterparts.

This issue doesn't generalise, however. It is focused on why it's more important than ever to enhance our scientific capabilities due to the ever-pressing issue of climate change. Female scientists will take the lead just as much as their male counterparts when it comes to dealing with this issue, from marine biologists to climatologists, from working in Silicon Valley to the North and South poles, every nation needs to enhance its scientific capability as much as is possible and this means tapping into the currently large potential of 50% of the global population, and tackle this global crisis.

This is, moreover, a truly international problem. Every nation will need to employ women to help both mitigate the impacts of climate change and reduce CO₂ emissions, from island nations in the Caribbean to global emergent powers in Asia and Africa.

History of the Problem

It's important to begin by assessing the role women have played in STEM throughout the ages. Women have made significant contributions to science with a strong tradition tracing itself back to the ancient world. Historians with an interest in gender and science have demonstrated the scientific endeavours and accomplishments of women, the barriers they have faced, and the strategies implemented to have their work peer-reviewed and accepted in major scientific journals and other publications. The historical, critical and sociological study

of these issues has become an academic discipline in its own right in many countries and there is extensive historiography to be explored by delegates with reference to their own countries.

The involvement of women in the field of medicine occurred in several early civilizations, and the study of natural philosophy in ancient Greece was open to women. Women began practising alchemy in the first or second centuries AD. During the Middle Ages in Europe, convents were an important place of education for women, and some of these communities provided opportunities for women to contribute to scholarly research. While the eleventh century saw the emergence of the first universities, women were, for the most part, excluded from university education. Outside academia, botany was clearly the science that benefitted most from the contributions of women in early modern times. The attitude to educating women in medical fields in Italy appears to have been more liberal than in other places. The first known woman to earn a university chair in a scientific field of studies, was eighteenth-century Italian scientist, Laura Bassi.

Although gender roles were largely defined and women's roles often regressed in the eighteenth century, women experienced great advances in science. During the nineteenth century, women were excluded from most formal scientific education, but they began to be admitted into learned societies during this period. In particular, they were excluded from the great universities (including Oxford!) throughout this period. In the later nineteenth century, the rise of the women's college provided jobs for women scientists and opportunities for education. This was accompanied by a growing acceptance of working women into the turn of the century, as women flocked to work in industry in greater numbers than ever before.

Marie Curie, a notable physicist and chemist who conducted pioneering research on radioactive decay, was the first woman to receive a Nobel Prize in Physics and became the first person to receive a second Nobel Prize in Chemistry. Forty women have been awarded the Nobel Prize between 1901 and 2010. Seventeen women have been awarded the Nobel Prize in physics, chemistry, physiology or medicine.

The real gap in scientific education occurred during the 20th century, although it was a legacy of long-entrenched and established gender roles. It paralleled the growth of scientific education more generally, as university curriculums began to shift from what was seen as an outdated and archaic focus on the classics and arts, a greater emphasis was placed on the modern sciences. Particularly in developing nations, where science was seen as the most useful and therefore the naturally prioritised part of a robust education, scientific education grew. While developing countries dealt with the issue of female education more generally, trying to overcome cultural norms as they are currently in many parts, the prospect of women in STEM appeared to be an even more difficult concept to realise.

However, this issue has been long documented and some work has been done to redress this imbalance. At a national level, particularly in developed countries, roles like ‘Ambassador for Women in STEM’ have been created and many NGOs target girls in schools to inspire them to take scientific subjects. It’s also important to acknowledge the work that female scientists are doing to tackle climate change – scientists such as Kiara Nirghin, in South Africa, who has developed a unique super-absorbent polymer that holds hundreds of times its weight in water when stored in soil.

In many ways, therefore, it can be argued that as the issue of Climate Change came into the scientific forum in the late 20th and into the 21st Century, attitudes towards women in STEM

were beginning to change. A whole new realm of problems and possibilities for scientists has actually created many more opportunities for women to get involved and a real need across the world to adapt the human way of life. With the dawn of the internet and the age of connectivity, moreover, opportunities for remote teaching and learning have only been positive developments for this truly global issue.

Current Situation

In 2019, UN Secretary-General António Guterres released a video, in which he described the participation of women and girls in science as “vital” to achieving the 2030 Agenda for Sustainable Development, because “the world cannot afford to miss out on the contributions of half our population.”⁴ The more specific issues women face however, will be detailed here.

Firstly, women often feel great pressure to prove their professional and academic worth repeatedly. One woman (a statistician) surveyed by Joan C. Williams reported, “People just assume you’re not going to be able to cut it.”⁵ This feeling has been reported in both professional workplaces and university settings. According to the study “Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering”⁶, multiple highly-qualified women in science report perceiving ongoing questioning about their ability and overall commitment to their respective disciplines. This feeling reportedly intensifies as women move up a career ladder into higher-level positions. Archaic and outdated opinions, of both men and women, which lead to women’s qualifications being doubted is a severe issue. A degree of integration with regard to international qualifications, particularly with respect

⁴ <https://news.un.org/en/story/2019/03/1034241>

⁵ J. C. Williams, *What Works for Women at Work: Four Patterns Working Women Need to Know*, (2014).

⁶ *Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering*. Washington, D.C.: National Academies Press, 2007. <https://doi.org/10.17226/11741>.

to the developed and undeveloped world, is truly necessary if we are to overcome this. Moreover, regulation as to how women should be treated by employers, while more difficult to achieve in more conservative, small government nations, is a key aspect which is missing.

Controversy and taboo surrounding motherhood follow women in many fields and the STEM fields are no exception. When a woman chooses to have both a family and a career, she is questioned about her commitment to her career; it might even be assumed that she will permanently depart. Decisions involving parenthood is highly personal yet still somehow follows women into the workplace, with young women often being denied long-term stable employment on account of them potentially needing to take time off for maternity leave. Some women report feeling as though they are viewed as engaging with their work as a hobby and not as a lifelong calling or profession due to their potential or current motherhood.

Maternity concerns tend to branch out into other barriers for women as well including income inequality and threats to their career due to stereotyping. The special report “Retaining Women in STEM Careers: Graduate Students as the Building Blocks of Change” states that women with children are 28% less likely than those without to be placed in tenure-track positions⁷. These issues are also faced in countries where a system of paid maternity leave (or for that matter paternity leave) is not established by law. Not only are there practical considerations to be taken but the potential cultural and societal backlash facing a woman who chooses to prioritise her work over her child-rearing capacity can be hard for anyone to face.

Professional mentorships are vitally important in fields where the odds are “stacked against” rising individuals. This is particularly the case in hyper-specialised scientific fields which will be at the forefront of dealing with Climate Change. Women jump multiple hurdles in STEM-related careers and having the advice of a woman who has already “been there, done that” can vastly improve the ability of women new to or rising up within their fields to stay the course and see that success is possible. Multiple reports state a lack of mentorship as an issue for women in STEM fields, in both developed and developing nations. Having a mentor can improve career opportunities and provide best practices for navigating career paths. Both formal and informal mentorships create advantageous partnerships for women; this can be difficult when there are so few women in these fields and in some cases, one woman might be the only one in her workplace or department. Mentors can actively address situations that might not be inherently easy for newcomers like workplace politics, negotiations (for salary or promotion), and overall life-balancing mechanisms.

Women are often on the receiving end of stereotype threat and multiple subtle and implicit biases. “Stereotype threat” describes a situation in which a negative preconceived stereotype can affect performance or even the willingness to attempt an activity at all. The problem of too few women in STEM fields could self-perpetuate given this stereotype threat where women are hesitant to enter and those who have entered such fields are dealing with the negativities and biases that accompany their entry. Women in minority groups are subjected to even further bias on a broad spectrum of discriminatory behaviour. Biases come in a variety of packaging and some are so subtle that even highly-educated, informed individuals can be promote them. Harvard’s Implicit Association Tests can help people identify and decode implicit biases they have of which they might be unaware in order to establish informed dialogue. While these issues are harder to deal with particularly when it comes to developing

nations, as frameworks are not in place for women to easily report stereotyping and bias, many of these problems require ‘out-of-the-box’, more creative solutions.

A study among Canadian engineers discovered that women engineers were earning 16% less on average than males performing equal positions.⁸ It’s also reported that the income gap widens between genders over time worked in the field. The study “Gender Bias in Stem Hiring” details how STEM employers were asked to review identical resumes, one female and the other male, and repeatedly gave the female resume a lower starting salary⁹. Income inequality is demotivating and degrading to women who already must wrestle with other inherent biases. Bridging the income inequality gap will amplify women’s progress in the struggle for equal treatment. STEM organizations should implement hiring standards that ensure an equal playing field in the application and interview processes. If women are not well remunerated for their work, they are less likely to want to do it. If they do not do the work, as Antonio Guterres points out, the world will be missing out. Particularly at times of hardship, however, women are among the first to be fired or face pay-cuts (as seen during the Coronavirus epidemic) and so it is important that we try and mitigate this as much as possible.

Women are still, therefore, experiencing documentable gender bias. In the continuous effort to encourage more young women and girls into STEM fields, there is much work to be done. Throughout all education levels, intelligence should not be spoken of as a fixed attribute that cannot alter with aging and education. Viewing intelligence as absolute can discourage young girls when they encounter difficulties in their education. Perseverance and encouragement is vital for all young minds to grow in STEM education.

⁸ <https://digileaders.com/5-barriers-women-face-stem/>

⁹ Friedmann, Enav, and Dorit Efrat-Treister. ‘Gender Bias in Stem Hiring: Implicit In-Group Gender Favoritism Among Men Managers’. Sage Publications, 2023.

When it comes to addressing implicit bias, it's up to all countries and governments, developed and developing, to take into account their own implicit biases. Government hiring practices moreover, should not fall short of what we have come to expect from it and the private sector and it's important that this is represented too at the international level. Women should be proactively recruited into STEM fields and be provided opportunities for STEM education where they can study in an equitable setting with other women.

Relevant UN Actions

To help improve this situation, UN Women is working with the UN Global Compact, the world's largest corporate sustainability initiative, to call on the private sector to make a commitment to gender equality by signing up to the Women's Empowerment Principles, arguing that gender diversity helps business to perform better. The 11th February has been marked as the 'International of Women and Girls in Science' and the Secretary-Generals have done a lot to highlight the importance, at least in theory of this issue. However platitudes and awareness will only go so far and when it comes to actual resolutions, the United Nations has put together next to nothing of substantive value.

Proposed Solutions

The best and possibly most effective solution would be something which would work with existing legislative bodies to legislate against discrimination along the various axes outlined above. Of course, the perennial issue of state sovereignty will need to be addressed here, as well as how exactly the UN could work to pressure countries, particularly ones which are less culturally progressive when it comes to female employment, to adopt such legislation. Concrete proposals, however, including paid maternity leave and anti-harassment legislation at the workplace are crucial.

It's also necessary that the UN continue to promote female education and work to encourage young women and girls to go into science. Proposed solutions include working with existing organisations, such as UN women and UNESCO to fund and enable such events and programmes to occur at the international level, particularly targeting developing countries.

Finally, the commission must adopt climate-change specific policies. In particular, a resolution to employ women in the UN's own climate change initiative is a good way for the organisation to lead by example. But also more creative solutions, to get women involved in coming together to solve our generation's biggest crisis will be necessary to deal with this perennial problem of our generation.

Questions a Resolution Must Answer

- How can the United Nations implement legislation while remaining culturally sensitive to the condition of women around the world and respect and maintain state sovereignty?
- How can the more subtle features affecting women in STEM, such as implicit bias and stereotyping, be effectively legislated against at an international level while many 'progressive' nations struggle to do so at a national level at the moment?
- How do we account for existing differences in the provision of education for women, not just in science, between developed and developing nations and create a resolution which addresses problems faced by one and all?
- How do we make solutions specific to dealing with the issue of climate change and unlocking women's potential in this respect, rather than women in STEM more generally?

- How will legislation remain robust and relevant in the future, given the current trajectory of women's scientific education and involvement?

Bloc Positions

The block positions outlined below are merely suggestions and we would suggest thorough research into each country's individual capabilities before making any sort of decision as to where you ought to lie.

Developed progressive countries will be in favour of pursuing a liberalising and empowering agenda, while still being wary about limited financial constraints and the need to be sensitive to other countries' lack of progress when it comes to getting women into STEM. It is likely that their real position on how involved they want to be with respect to promoting women to help solve climate change will depend on their current political situation, with the USA under Donald Trump being less amenable and therefore potentially less willing to help than France under Emmanuel Macron.

Developing countries will be much more varied. Some will welcome support, while others will criticise the hypocrisy of more developed nations and appeal to state sovereignty. Those which are most culturally conservative to the idea of women working, particularly those in the Middle East, will seek to aggressively defend their right to deem what it is culturally appropriate for a woman to involve herself in.

Suggestions for Further Research

Delegates must focus on their own countries as a starting place for research. Articles and webpages which explain what measures have been taken already to promote women in STEM

will be most useful. Then, a look at the work already done by UN Women and UNESCO, to see what provisions already exist and how delegates' own creative solutions will fit into the wider picture is necessary. It is unlikely that book resources will be of as much use as the internet, other than for historical background about individual countries. It's also important that delegates have a good idea of how climate change is and will affect their countries, and what the state of domestic 'climate politics' is.

Closing Remarks

We hope you've enjoyed reading this background guide and we encourage you to continue your research from the suggestions that we've put forward. It's been a pleasure putting this together and we hope you'll appreciate the topic just as much as I have in my research.

We look forward to seeing what you come up with at the OxfordMUN-SHSID!

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